



BOOK REVIEW

Andrew Jones, *How Kant Matters for Biology. A Philosophical History* Cardiff: University of Wales Press, 2023 Pp. xii + 233 ISBN 9781786839732 (hbk) £75.00

In this book, Andrew Jones sets the goal to examine both ‘the historical and philosophical implications of the influence of Kant’s Critical philosophy in the British Isles in the nineteenth century’ (p. 10). This statement seems somewhat inaccurate, though, since Jones in fact discusses not only Kant’s influence on Whewell and Darwin but also appeals to Kant by a number of contemporary philosophers of biology and philosophers of science more generally. This discrepancy between the official statement of the book’s subject and its actual content is a symptom of a more general unclarity about the shape and scope of the project to which I will return after providing a summary of the book.

In Chapter 1, the author examines some of the literature that discusses Kant’s influence on the development of biology (mostly in the German context) and criticises the concept of influence, which other authors, particularly Timothy Lenoir and his critics, had, in his view, explicitly or implicitly accepted. Jones argues that they have presumed that the influence of some ideas on the development of other ideas presupposes a certain substantial amount of similarity between the influencing and the influenced ideas. According to him, Lenoir worked with this concept of influence because he proposed the thesis that Kant’s discussion of teleological judgement provided biology with a core of a research programme (in Lakatos’ sense). Zammito and Richards, on the other hand, have argued that rather than simply accepting Kant’s conclusions, German biologists starting from Blumenbach have transformed and creatively misunderstood those conclusions. Jones argues that such transformations and misunderstandings do not mean that Kant did not exercise influence upon these biologists and, using resources from various authors, develops a concept of influence that allows for such creative misunderstandings and transformations. Now, I agree that such a permissive concept of influence is more fruitful than the restrictive concept that imposes ‘the condition of similarity’ (p. 53). However, I am not convinced that either Lenoir or Zammito ever worked with the restrictive concept. It seems that for Lenoir it was the transformed version of Kant’s conclusions that formed the core of the research programme of biology. Furthermore, as Jones admits, Zammito concedes that Kant was influential on the development of biology. Jones claims that there is ‘the tension within Zammito’s account’ in that Zammito concedes Kant’s significant influence while claiming that ‘the original formulation of Kant’s philosophy has little to offer biology’ (p. 53). But I fail to see the tension: both of these claims can be true if Zammito himself thought that it was the creatively misunderstood Kant that exercised the influence on biology. In fact, Zammito argued that biologists have used Kant’s formulation to legitimate their projects without sticking to his epistemological commitments, which also seems compatible with both claims Jones focuses on.

In the same chapter, Jones also discusses Kuhn's concept of scientific revolution and relates Kant's criticism of political revolutions to this, suggesting that Kant rejected the latter because he thought that overthrowing a political system results in our inability to judge whether the later system is really better than the previous one. He also suggests that transposing this into the sphere of science provides an argument against Kuhn because of the latter's 'appeal to political revolutions as justification for scientific revolutions' (p. 36). Yet, Kuhn's appeal to political revolutions was not meant to justify scientific revolutions, but rather to make them more intelligible by comparing them with the better-understood social and political processes. And we certainly do not need to draw on Kant's political philosophy in order to criticise Kuhn for standing 'in opposition to the rationality and progress of science' (p. 36), for this is the objection philosophers have been regularly raising against Kuhn since the publication of his *Structure of Scientific Revolutions*.

In Chapter 2, Jones deals with Kant's response to Hume and with the status of laws of nature in contemporary philosophy of science. He argues that Kant misunderstood Hume's distinction between relations of ideas and matters of fact, wrongfully assimilating it to his own distinction between analytic and synthetic judgements. He then briefly touches on the sceptical-realist interpretation of Hume and then on the topic of Kant's response to Hume on the topic of causality. Finally, Jones discusses two contemporary positions on the status of the laws of nature, those of Cartwright and Bhaskar. He plausibly argues that Bhaskar's position is basically rationalist while Cartwright's position is empiricist. Furthermore, he suggests that one can construct an antinomy between these positions and resolve it in a Kantian fashion, arguing that both positions presuppose the applicability of laws to objects in themselves, whereas the Kantian position is that laws are regulative principles necessary for the possibility of scientific study of appearances.

Chapters 3 and 4 finally begin the discussion of the official project of the book. In Chapter 3, the author discusses the relationship between Whewell and Kant, concerning, in particular, Whewell's endorsement of the active contribution of the mind in cognition, Whewell's version of dualism (between things and thoughts, rather than that between intuitions and concepts), the similarities and differences between Whewell's principle of consilience and Kant's regulative principle of systematicity of scientific knowledge, and the different role of God in Whewell's and Kant's philosophies, as well as Whewell's critique of the limitation of knowledge to appearances. Jones suggests that Whewell significantly transformed Kant's principle of systematicity, fitting it into his own transcendently realist framework and his physico-theology. He then goes into the discussion of the role of consilience in contemporary philosophy of science and related fields.

Chapter 4 then investigates Whewell's and, indirectly, Kant's influence on Darwin. Following Sober, Jones distinguishes two main arguments in Darwin's *Origin of Species*, namely the argument from the analogy between artificial and natural selection and the argument from common ancestry of species. In his reading, the latter argument is an application of Whewell's principle of consilience, whereas the

former is an application of the kind of analogical reasoning that could be traced back to Herschel.

On the question of whether Kant's actual account of organisms in the third *Critique* has influenced Darwin's understanding of organisms, Jones answers in the negative. Whereas Kant in §§64–65 of the third *Critique* has stressed the disanalogies between organisms and artefacts, Darwin, in Jones' reading, treats organisms as analogous to artefacts, similarly to the intelligent design tradition most clearly exemplified in Paley. What distinguishes Darwin from the latter is that he also provided an account of natural selection, which he considers in analogy with artificial selection. There is a further interpretative issue about the proper understanding of the manner of operation of natural selection in Darwin. Ruse takes it to be a purely mechanical process, whereas, for Richards, Darwin's natural selection is ultimately itself an intelligent process set up by the divine mind. Jones suggests that in Richards' reading, Darwin ends up being somewhat closer to Kant after all, inasmuch as the process that shapes natural organisms is not merely mechanical, so that in this respect organisms are disanalogous to machines.

Jones ends Chapter 4 by discussing the question of design in contemporary philosophy of biology. Here he touches on Gould and Lewontin's critique of adaptationism in evolutionary biology and follows Ratcliffe in suggesting that the intentional stance towards nature, that is, considering organisms as if they are designed, cannot be ultimately eliminated, as Dennett suggests. Jones then briefly considers an approach to organisms that does not treat them as if they are designed, but rather, in thermodynamic terms, as dissipative structures. Yet, the problem with this is that it is not clear whether we can distinguish between living and non-living dissipative structures without appeal to functions or other teleological concepts.

Chapter 5 continues considering issues related to philosophy of biology and science. It deals with approaches to individuating entities in biology and considers attempts to think about organisms as autonomous entities (arguing that this approach is not compatible with Kant's own position because for Kant we make sense of organisms in light of our own experience of the causality of freedom and not the other way around). Finally, Jones argues that Kant's political philosophy offers us a way to think about the role of values in science and the social role of science.

I found the central chapters of the book that deal with the topic formulated in the introduction interesting and useful, and I wish the author focused more on such issues as the relation of Whewell and Darwin to Kant and Kant-inspired approaches to nature (for example, considering whether and to what extent German Idealist and Romantic *Naturphilosophie* [which was after all influenced by Kant] exercised influence on Darwin, as Richards had argued). In general, though, as my summary perhaps already suggests, I found the book to be rather unfocused and poorly organised. Chapter 1 contains discussions such as that about scientific and political revolutions discussed above which do not belong to its main topic of establishing a fruitful concept of influence. Chapter 2 does not belong to the main topic of the book at all, even though its discussion of contemporary rationalist and empiricist approaches to laws of nature is interesting in itself. Chapters 3 and 4 both contain

materials which seem to be more germane to the topic of Chapter 5 (which itself goes beyond the official topic and contains a somewhat loosely organised set of discussions). In the end, the book definitely contains valuable material but is not very well-organised and is too cursory in its treatment of some topics.

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